

**ELECTRONIC COMMUNICATIONS COMMITTEE**

ECC Decision  
of 12 November 2010  
on compatibility between the fixed satellite service in the  
30-31 GHz band and the Earth exploration satellite  
service (passive) in the 31.3-31.5 GHz band

(ECC/DEC/(10)02)



## **EXPLANATORY MEMORANDUM**

### **1 INTRODUCTION**

This ECC Decision has been developed with the aim of providing long-term coexistence conditions between fixed satellite service (FSS) (Earth-to-space) in the band 30-31 GHz and Earth exploration satellite service (EESS) (passive) in the band 31.3-31.5 GHz.

It provides relevant compatibility conditions to apply to FSS stations to ensure a relevant and long-term protection of EESS (passive) sensors.

### **2 BACKGROUND**

World Radiocommunication Conference 2007 (WRC-07) took important decisions concerning the protection of the Earth exploration satellite service passive bands, in particular under its agenda item 1.20 with the adoption of Resolutions 750 (WRC-07), referred by footnote 5.338A addressing compatibility between EESS (passive) and relevant active services in various frequency bands.

Although this Resolution 750 (WRC-07) recommends levels to be applied to FSS Earth stations in the 30-31 GHz band, the discussions during WRC-07 showed that no administration argued against ensuring protection of EESS (passive) and that administrations having advocated recommended levels mainly presented arguments in relation to the application schedule of these limits highlighting regulatory constraints in relation with current issued licenses or requiring time for development of equipment fulfilling the requirements specified at WRC-07.

ECC further considered these WRC-07 and came to the conclusion that translating the recommended levels adopted at WRC-07 into mandatory limits within an ECC Decision would provide a clear and non-ambiguous message toward reaching long term EESS (passive) bands protection and will also give a clear sign to the international community about the recognition by Europe of the societal and economical values of these applications related to climate monitoring and natural disasters prediction.

### **3 REQUIREMENT FOR AN ECC DECISION**

The allocation or designation of frequency bands under specified conditions in CEPT member countries is laid down by law, regulation or administrative action. ECC Decisions are required to deal with the carriage and use of equipment throughout Europe.

The ECC also recognizes that a clear and non-ambiguous message toward reaching long term EESS (passive) bands protection is necessary, stressing the societal and economical values of these applications related to global warming and natural disasters prediction.

The harmonisation on a European basis of the condition of use of the 30-31 GHz band by FSS in view of ensuring long-term protection of EESS (passive) in the 31.3-31.5 GHz band would be in particular consistent with the *Radio Spectrum Policy Group Report and Opinion on "a coordinated EU spectrum approach for scientific use of radio spectrum"* and would represent a clear sign to the international community about the importance of such applications.

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of 12/11/2010**

**on compatibility between the fixed satellite service in the 30-31 GHz band  
and the Earth exploration satellite service (passive) in the 31.3-31.5 GHz band**

**(ECC/DEC/(10)02)**

“The European Conference of Postal and Telecommunications Administrations,

*considering*

- a) that the frequency band 31.3-31.5 GHz is allocated to the Earth exploration-satellite service (EESS) (passive) and to the space research service (passive) on a primary basis subject to RR N° 5.340;
- b) that the band 31.3-31.5 GHz, together with the band 31.5-31.8 GHz is an essential “window channel” which play a predominant role in the retrieval process of temperature measurements and other atmospheric parameters together with measurements simultaneously performed at 24, 50, 52 and 90 GHz;
- c) that EESS (passive) sensors provide worldwide measurements that benefit all countries, even if these sensors are not operated by their country;
- d) that this frequency band is used by passive sensors to study natural phenomena producing radio emissions at frequencies fixed by the laws of nature, and therefore shifting frequency to avoid or mitigate interference problems may not be possible;
- e) that unwanted emissions from active services have the potential to cause unacceptable interference to EESS (passive) sensors;
- f) that, for technical or operational reasons, the general limits in Appendix 3 may be insufficient in protecting the EESS (passive) in specific bands;
- g) that, in many cases, the bands adjacent or nearby to passive service bands are used and will continue to be used for various active service applications;
- h) that the frequency band 30.0-31.0 GHz is also allocated to the fixed satellite service on a primary basis (Earth-to-space);
- i) that studies have concluded that appropriate compatibility criteria applicable to FSS stations would reduce this interference to a level that would permit passive sensors to operate successfully, while allowing continuing operation of active services in the same band;
- j) that WRC-07 adopted Resolution 750 that already makes mandatory limits of unwanted emissions from Fixed Service stations operated in the 31-31.3 GHz band to ensure protection of EESS (passive) in the 31.3-31.5 GHz band;
- k) that Resolution 750 (WRC-07) also urge administrations to take all reasonable steps to comply with the recommended relevant compatibility criteria applied to FSS;
- l) that translating these compatibility criteria into mandatory limits in CEPT would ensure future EESS (passive) operations in these bands and will also give a clear sign to the international community about the recognition by CEPT of the societal and economical values of these applications related to global warming and natural disasters prediction.

DECIDES

1. that the unwanted emissions limits detailed in the Annex shall apply to stations in the fixed satellite service operating in CEPT countries in the 30-31 GHz band;
2. that this Decision enters into force on 12 November 2010;
3. that the preferred date for implementation of this Decision shall be 30 May 2011;
4. that CEPT administrations shall communicate the national measures implementing this Decision to the ECC Chairman and the Office when the Decision is nationally implemented.”

*Note:*

*Please check the Office web site ([www.ero.dk](http://www.ero.dk)) for the up to date position on the implementation of this and other ERC/ECTRA/ECC Decisions.*

**ANNEX**

**LIMITS OF UNWANTED EMISSION POWER INTO THE 31.3-31.5 GHz BAND  
FROM FSS EARTH STATIONS OPERATED IN THE 30-31 GHz BAND**

|   |  |
|---|--|
|   | Limits of unwanted emission power into the 200 MHz of the EESS (passive) band<br>(see notes 1 and 2) |
| Earth stations having an antenna gain greater than or equal to 56 dBi | -9 dBW   |
| Earth stations having an antenna gain less than 56 dBi                | -20 dBW  |

Note 1: The unwanted emission power is to be understood here as the level measured at the antenna port.

Note 2: These limits apply under clear-sky conditions. During fading conditions, these limits may be exceeded by Earth stations when using uplink power control.